

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
27 January 2005 (27.01.2005)

PCT

(10) International Publication Number
WO 2005/008215 A2

- (51) International Patent Classification: G01N
- (21) International Application Number: PCT/US2004/021673
- (22) International Filing Date: 6 July 2004 (06.07.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 10/615,116 7 July 2003 (07.07.2003) US
- (71) Applicant (for all designated States except US): CY-TOKINETICS, INC. [US/US]; 280 East Grand Avenue, South San Francisco, CA 94080 (US).
- (72) Inventors; and
- (73) Inventors/Applicants (for US only): COLEMAN, Daniel [US/US]; 328 West 36th Avenue, San Mateo, CA 94403 (US). CONG, Ge [CN/US]; 10944 San Pablo Avenue, El Cerrito, CA 94530 (US). RAO, Albing [CN/US]; 1944 Garden Drive, Burlingame, CA 94010 (US). VAISBERG, Eugeni [US/US]; 647 Regasus Lane, Foster City, CA 94404 (US).
- (74) Agent: GARRETT, Arthur, S.; Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, 1300 I Street, N.W., Washington, DC 20005-3315 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— without international search report and to be republished upon receipt of that report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHODS AND APPARATUS FOR CHARACTERISING CELLS AND TREATMENTS

(57) Abstract: Methods, data processing apparatus and computer program products for characterising cells and the affect of treatments administered to cells are disclosed. In particular methods of identifying bi-nuclear cells are described which include capturing an image of a plurality of marked cells and processing the image to obtain features of the plurality of cells. The features are analyzed to determine whether the features is indicative of bi-nuclear cells. Those cells for which the first feature is indicative of bi-nuclear cells are identified as being bi-nuclear. Three algorithms in particular are described. A first algorithm can be used to determine the number of nuclei in an image of a nuclear component by determining the number of concave regions within the outline of the image. A second algorithm uses a measure of the amount of cytoplasmic material between a pair of nuclei to identify by-nuclear cells. A third algorithm uses the statistics of the spatial distribution of objects to identify isolated pairs of nuclei which can be considered to be from the same cell.

WO 2005/008215 A2